

FLETCHER et al
Appl. No. 10/574,232
March 5, 2009

REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 1-4, 6-28, 31, 36, 38, 39 and 44-49 are in the case.

I. CLAIM OBJECTIONS

Claim 46 is objected to under 37 C.F.R. §1.75(c), as allegedly being of improper dependent form for failing to further limit the subject matter of a previous claim. In response, claim 46 has been amended to be dependent on claim 44. Withdrawal of the objection is respectfully requested.

II. THE FORMAL REJECTION

Claim 42 stands rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, in view of the phrases '(a)...with, for example absorb onto,...'; '...viscous composition, especially oil, in...' and '(c)...viscous composition, especially oil'. In response, and without conceding to the rejection, claim 42 has been canceled without prejudice. Withdrawal of the rejection is respectfully requested.

III. THE ANTICIPATION REJECTION

Claims 1-10, 15-27, 38-39, 42 and 48-50 are rejected under 35 U.S.C. 102(b) as being anticipated by Chirinos et al. (US 5,641,433) (Chirinos). The rejection is respectfully traversed.

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The claimed invention provides a method for reducing the viscosity of a viscous composition which is arranged to flow along a fluid flow path. The method comprises contacting the viscous composition in the fluid flow path with a treatment fluid formulation. The treatment fluid formulation comprises a polymeric material AA which includes -O- moieties pendent from a polymeric backbone thereof, wherein polymeric material AA is optionally cross-linked. The treatment fluid formulation is initially contacted with the viscous composition in the fluid flow path at or downstream of a producing face of a subterranean formation.

An important aspect of the claimed invention is where the initial contact of the treatment fluid formulation and viscous composition occurs. Thus, the viscous composition is in the fluid flow path when the initial contact occurs, and the fluid flow path includes both a position at a producing face of a subterranean formation and a position downstream of the producing face. The flow path therefore extends from a position at a producing face of a subterranean formation and viscous composition is contacted with treatment fluid formulation when in such a flow path.

The claimed invention is not anticipated by Chirinos. Chirinos does not disclose reducing the viscosity "of a viscous composition which is arranged to flow along a fluid flow path". In fact, according to Chirinos, a vessel is used to mix oil and formulation (see column 4, line 35 and the examples). Furthermore, there is no initial contact of formulation with the viscous composition in a fluid flow path "at or downstream of a producing face of a subterranean formation".

Based on the above, it is clear that Chirinos does not anticipate the method as claimed. Withdrawal of the anticipation rejection is respectfully requested.

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IV. THE OBVIOUSNESS REJECTIONS

Claims 11-14 and 44-46 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Chirinos. Claims 28, 31 and 47 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Chirinos in view of Hoskin et al. (US 4,896,723) (Hoskin). Claim 36 stands rejected under 35 U.S.C. §103(a) as allegedly unpatentable over Chirinos in view of Eagland et al. (US 2002/0128374 A1) (Eagland). The obviousness rejections are respectfully traversed.

Chirinos discloses preparation of a specific type of an emulsion (a high internal phase ratio - HIPR - emulsion) using a surfactant. This emulsion is produced in a vessel (column 4, line 35) having arms that rotate at specific speeds (500 to 1200 rpms). It is clear that significant mixing is required, since lower rotation speeds are ineffective (column 4, lines 37 to 38). It is also noted that the specific example in Chirinos (column 5, line 24) discloses use of a mixer. There is no disclosure or suggestion in Chirinos of initially contacting viscous composition with a treatment fluid formulation in a flow path at or downstream of a producing face of a subterranean formation, as required by the presently claimed invention.

While Chirinos may transport the emulsions manufactured to a pipeline (column 4, line 51), this pipeline transportation is of an already formed HIPR, i.e., an emulsion formed by a specific mixing methodology in a vessel. There is no suggestion in Chirinos of initially contacting a treatment fluid formulation with viscous composition in a flow path at or downstream of a producing face of a subterranean formation. Moreover, given the requirements in Chirinos of very careful mixing in a vessel and careful control of oil to surfactant ratios to achieve an HIPR emulsion, the person of ordinary skill in the

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art would not have been motivated to contact a treatment fluid formulation with viscous composition in the manner as presently claimed.

Furthermore, the presently claimed invention requires a treatment fluid formulation to comprise a specific polymeric material AA which in preferred embodiments comprises polyvinylalcohol. While Chirinos states (column 3, lines 55 *et seq.*) that certain polymers selected from polyvinylalcohol, polyethylene oxide, polyvinylpyrrolidone and polysaccharide biopolymers may be added in addition to the surfactant or alkali, such materials are added only to overcome a specific problem, namely the problem discussed at column 3, line 50 of Chirinos, i.e., that ionic surfactants are more sensitive to the salinity of the aqueous phase and to overcome a "salt tolerance" problem. Chirinos does not say at what stage in the process such hydrophilic polymers may be added, or how they may be added. Chirinos also does not exemplify the use of such polymers.

The problem with which the present invention is concerned is, for example, to facilitate transport and/or recovery of a viscous composition in a fluid flow path which extends from a producing face of a subterranean formation. The solution arrived by the present inventors is as set forth in the current claims. The person of ordinary skill would not have been motivated to modify the disclosure in Chirinos and arrive at the present invention, because Chirinos does not contact a viscous composition in a fluid flow path at or downstream of a producing face of a subterranean formation. Furthermore, faced with the problem described above, there would have been no motivation for the skilled artisan to select polyvinylalcohol from the list of possible additives described at column 3, line 54 of Chirinos and use it in the presently claimed viscosity reducing methodology.

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Chirinos only describes use of its polymers at column 3, line 54 to improve salt tolerance.

Furthermore, there would have been no motivation for a skilled person to select polyvinylalcohol from the group of polymers described at column 3, line 54, incorporate that polymer in a treatment fluid formulation, and use that treatment fluid formulation to contact a viscous composition in a fluid flow path at or downstream of a producing face of a subterranean formation. The skilled person receives no insight from Chirinos that the presently claimed methodology may advantageously be used for reducing viscosity of a viscous composition in a fluid flow path. Chirinos, therefore, does not give rise to a *prima facie* case of obviousness of the presently claimed invention.

The cited secondary art to Hoskin and Eagland fails to cure the above-noted deficiency of Chirinos. The person of ordinary skill would not have thought to combine Chirinos with Hoskin or Chirinos and Eagland to arrive at the presently claimed subject matter. In this regard, Hoskin is not concerned with a method for reducing viscosity of a viscous composition and does not contact a viscous composition in the manner presently claimed. Rather, Hoskin is concerned with a quite different area of oil recovery, compared to that in accordance with the present invention. Eagland is cited against the process claim 36 which is indirectly dependent on claim 1 as amended. The combination of Eagland and Chirinos falls to suggest the invention as now claimed particularly as there is no suggestion in either reference of contacting a viscous composition in a fluid flow path at or downstream of a producing face of a subterranean formation.

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There would clearly have been no motivation for the skilled person to combine Chirinos and Hoskin or Chirinos and Eagland. Even if that was attempted (it is believed that such combinations would not have occurred to one of ordinary skill), the invention as claimed would not have resulted or have been rendered obvious thereby. Withdrawal of the obviousness rejections is respectfully requested.

V. CLAIM AMENDMENTS

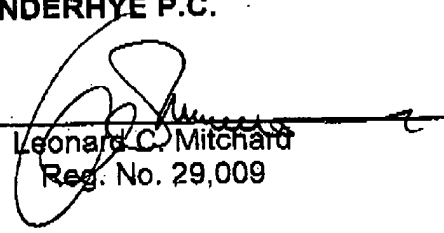
Support for amended claim 1 appears at page 4, line 8 et seq. of the application as filed. No new matter is entered.

Favorable action is awaited.

Respectfully submitted,

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